

AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions of claims in the application:

Listing of Claims:

1. (Currently Amended) A heat regulating device for regulating a heat flow into and out of an integrated circuit semiconductor body during operation comprising:

a plurality of thermo-electrical structures that create a uniform temperature gradient across an integrated circuit semiconductor body via at least one of heat inducement to or dissipation of generated heat away from a portion of the integrated circuit semiconductor body wherein each of the thermo-electrical structures is a composite composed of a layer having at least one part tailored to a heat-generating characteristic of a portion of the integrated circuit semiconductor body;

at least one layer of a conductive material in contact with the plurality of thermo-electrical ~~thermoelectrical~~ structures for conducting heat flow; and

at least one of the plurality of the thermoelectric structures has a distribution of line patterns that is denser towards center of its structure and decreases in density towards outer limits of the structure wherein the at least one thermoelectric structure is coupled to an associated hot spot wherein each of the thermo-electrical structures has a structure of line patterns selected from a group comprising: helix structure and a spring structure.

2. (Previously Presented) A heat regulating device according to claim 1, each of the thermo-electrical structures is a trough within the body of the layer of the conductive material.

3. (Previously Presented) A heat regulating device according to claim 1, the plurality of the thermo-electrical structures form a spreading assembly.

4. (Original) A heat regulating device according to claim 3, the spreading assembly is operatively connected to a heat sink.

5. (Previously Presented) A heat regulating device according to claim 1, each of the thermo-electrical structures is a conductive pathway for heat transfer.

6. (Cancelled)

7. (Currently Amended) A heat regulating device for regulating a heat flow of an integrated circuit during operation comprising:

at least one of means for inducing heat into a portion of a semiconductor body of the integrated circuit utilizing a plurality of thermo-electric structures or means for dissipating heat away from a portion of a semiconductor body of the integrated circuit utilizing a plurality of thermo-electric structures wherein each of the thermo-electrical structures is a composite composed of a layer having at least one part tailored to a heat-generating characteristic of a portion of the integrated circuit semiconductor body;

at least one of the heat inducing means or heat dissipating means create a uniform temperature gradient across the semiconductor body;

means for conducting heat in contact with the means for inducing heat into or dissipating heat away from the portion of the semiconductor body; and

at least one of the plurality of the thermoelectric structures has a structure with a distribution of line patterns that is denser towards center of the structure and progressively less dense towards outer edges of the structure wherein the at least one thermoelectric structure is coupled to a hot spot wherein each of the thermo-electrical structures has a structure of line patterns selected from a group comprising: helix structure and a spring structure.

8-22. (Cancelled)

23. (Previously Presented) A heat regulating device according to claim 3, with components embedded into the spreading assembly to manage the heat flow away from and/or into the integrated circuit semiconductor body.

24. (Cancelled)

25. (Previously Presented) A heat regulating device according to claim 1, each of the thermo-electrical structures being embedded with measuring devices to measure various physical properties of the integrated circuit semiconductor body.

26. (Previously Presented) A heat regulating device according to claim 1, each of the thermo-electrical structures being an external element attached to the surface of the heat regulating device.

27-32. (Cancelled)

33. (Previously Presented) A heat regulating device according to claim 1, at least one thermo-electric structure is integrated with the semiconductor body such that the thermo-electrical structure is positioned in a region of the semiconductor body where a hot spot is anticipated.

34. (Currently Amended) A system that facilitates reducing the accumulation and concentration of stress in an integrated circuit during operation, comprising:

means for creating a uniform temperature gradient throughout the integrated circuit based at least in part upon one of a heat dissipation and a heat induction; and

the means for creating a uniform temperature gradient comprises a plurality of thermo-electrical structures, wherein each of the thermo-electrical structures has a denser distribution of line patterns towards center of its structure and a less dense distribution of lines towards outer limits of the structure, and wherein each of the thermo-electrical structures has a structure of line patterns selected from a group comprising: helix structure, and a spring structure, and wherein each of the thermo-electrical structures is a composite composed of a layer having at least one part tailored to a heat-generating characteristic of a portion of the integrated circuit semiconductor body wherein the means for creating a uniform temperature gradient is coupled with a hot spot.